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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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|---|---|
| First Named Inventor : Jeffrey Duane Vance | |
| Appln. No.: 10/075,180 | |
| Filed : February 13, 2002 | Group Art Unit: 1772 |
| For : POLYMERIC MATERIAL WITH RESISTANT STRUCTURE AND METHOD | Examiner: S.M. Nolan |
| Docket No.: H49.12-0003 | |

# TRANSMITTAL OF APPEAL BRIEF
# (PATENT APPLICATION - 37 C.F.R. §41.37)

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

I HEREBY CERTIFY THAT THIS PAPER IS BEING SENT BY U.S. MAIL, FIRST CLASS, TO THE COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450, THIS

15 DAY OF November, 2004

Deirdre Kvale

PATENT ATTORNEY

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on September 13, 2004.

FEE STATUS

[x] Small entity status under 37 C.F.R. §§ 1.9 and 1.27 is established by a verified statement.

FEE FOR FILING APPEAL BRIEF

Pursuant to 37 C.F.R. §41.20(b)(2) the fee for filing the Appeal Brief is $170.00.

The Director is authorized to charge any additional fees associated with this paper or credit any overpayment to Deposit Account No. 23-1123. A duplicate copy of this communication is enclosed.

Respectfully submitted,

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# BRIEF FOR APPELLANT

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15 DAY OF November 2004

Deirdre Z. Krake

PATENT ATTORNEY

Sir:

This is an appeal from a Final Office Action dated May 11, 2004 in which claims 1, 3-5, 7-14 and 30-36 were finally rejected.

## REAL PARTY IN INTEREST

HDM, Inc, a corporation organized under the laws of the state of Minnesota, and having offices at 570 Hale Ave., Oakdale, Minnesota, has acquired the entire right, title and interest in and to the invention, the application, and any and all patents to be obtained therefor, as set forth in the Assignment filed with the patent application and recorded on Reel 012597, frame 0145.

## RELATED APPEALS AND INTERFERENCES

There are no known related appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

## STATUS OF THE CLAIMS

I. Total number of claims in the application.

| | |
|---|---|
| Claims in the application are: | 1-36 |

II. Status of all the claims.

| | | |
|---|---|---|
| A. | Claims cancelled: | 2 |
| B. | Claims withdrawn but not cancelled: | 15-29 |
| C. | Claims pending: | 1, 3-36 |
| D. | Claims allowed: | none |
| E. | Claims rejected: | 1,3-5,7-14 and 30-36 |
| F. | Claims Objected to: | 6, 14 |

III. Claims on appeal

| | |
|---|---|
| The claims on appeal are: | 1, 3-5, 7-14 and 30-36 |

## STATUS OF AMENDMENTS

No Amendment After Final has been filed.

## SUMMARY OF INVENTION

The present invention relates to a material having a resistant infrastructure. The material includes opposed flexible layers 110, 112 which are connected along a seam 122 to form an interspatial pocket 124. The resistant infrastructure 114-1 is disposed in the interspatial pocket 124 formed by the opposed flexible layers 110, 112. (Applicants' specification, page 5, lines 14-18). In one aspect, the resistant infrastructure 114 includes an array of spaced penetration resistant plates 104 to provide a puncture or cut resistant structure in the interspatial pocket 124. (Applicants' specification, page 5, lines 7-18).

The invention embodies a material having a resistant infrastructure between opposed flexible layers 110, 112 formed on one of the flexible layers 112. (Applicants' specification, page 6, lines 5-7). In the embodiment shown in FIG. 6, the resistant

infrastructure includes an array of spaced guard plates 104 formed on flexible layer 112 and the flexible layer 112 is connected to flexible layer 110 to form interspatial pocket 124 between the flexible layers 110, 112. (Applicants' specification, page 6, lines 1-7). In the embodiment of FIG. 13, guard plates 106 are formed on body layer 142 and body layer 142 is sealed to body layer 140 to form interspatial pocket 146 between the body layers 140, 142 having a resistant infrastructure disposed therein. (Applicants' specification, page 10, lines 7-14).

Alternatively, the material includes a resistant fabric or material 114-3 floatably disposed in an interspatial pocket 124 formed between opposed elastomeric or polymer layers. (Applicants' specification, page 6, lines 14-29). As shown in FIG. 7, the resistant infrastructure 114-3 is formed of a resistant fabric such as Kevlar or Spectra and is interposed between layers 110, 112. (Applicants' specification, page 6, lines 14-29). In FIG. 15, resistant infrastructure 114-7 or fabric is interposed in interspatial pocket 146 formed between polymer layers 140, 142. (Applicants' specification, page 13, lines 6-8).

## GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

I. The rejection of claim, 10, 13, 14, 30 and 32-34 under 35 U.S.C. § 112, first paragraph.

II. The rejection of claim 3 under 35 U.S.C. § 112, second paragraph.

III. The rejection of claims 13-14 under 35 U.S.C. § 103 as being unpatentable over Widder in view of Fortier, Gould and Rousseau.

IV. The rejection of claims 1, 4-5, 7-9, 11-12 and 30-36 under 35 U.S.C. § 103 as being unpatentable over Widder in view of Fortier and Gould.

ARGUMENT

Applicants traverse the rejection of the claims 1, 3-5, 7-14 and 30-36 on appeal as follows.

**Claim 10 is proper under 35 U.S.C. § 112**

Claim 10 was rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement since the Examiner is unable to find support in the specification for newly recited limitations in the claim. Claim 10 recites inter alia opposed flexible layers and a resistant infrastructure including a plurality of resistant plates formed on one of the opposed flexible layers which is fully supported by Applicants' specification.

First, the subject matter of amended claim 10 is supported by original claim 10. Original claim 10 was dependent upon claim 8 which recited that a **plurality of guard plates** as set forth in claim 1 are **formed on a substrate** and as further recited in original claim 10 the **substrate** is **one of the opposed flexible layers** set forth in claim 1.

Claim 10 has been amended to independent form to recite a material including a resistant infrastructure including **a plurality of resistant plates** formed **on one of the opposed flexible layers**. Thus, the subject matter of amended claim 10 reciting a plurality of resistant plates on one of the opposed flexible layers is supported by original claim 10, in the application as filed, reciting a plurality of guard plates on a substrate which is one of the opposed flexible layers.

Second, the subject matter of amended claim 10 is disclosed in the description of preferred embodiments of Applicants' specification. On page 6, Applicants' specification states that "one of the body or elastomeric layers 110, 112 forms a substrate for the guard plate array 104" as illustrated in FIG. 6. (Applicants' Specification, page 6, lines 1-7). Also on page 10,

it is disclosed that body or elastomeric layer 142 forms the substrate upon which guard plates 106 are formed as illustrated in FIG. 13. (Applicant's specification, page 10, lines 12-19). Thus there is support in Applicants' specification for "resistant plates formed on one of the opposed flexible layers" as recited in claim 10.

**Claims 13-14 are proper under 35 U.S.C. § 112**

Claims 13-14 were also rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement since the Examiner is unable to find support in the specification for newly recited limitations in the claims. Claims 13-14 recite inter alia opposed flexible layers and a penetration resistant fabric or material floatably disposed in an interspatial pocket relative to at least one of the flexible layers.

Original claims 13 and 14 were dependent upon claim 1 which recited opposed flexible layers, a seam connecting portions of the opposed flexible layers and a resistant infrastructure. Claim 13 as amended is independent and recites elements or structure of original claim 1 including opposed flexible layers and a seam. Additionally claim 13 recites a penetration resistant fabric or material floatably disposed in an interspatial pocket. The language "floatably disposed in an interspatial pocket relative to at one of the opposed flexible layers" was added and is supported by Applicants' specification on page 5, lines 23-26. Page 5, lines 19-26 reads as follows:

> The infrastructure 114-1 is **floatabl[y]** disposed in the interspatial pocket 124 to limit interference with the flexible elastomeric layers 110, 112.

On page 6, lines 3-7, the specification discloses an alternate embodiment where the guard plates are formed on layer 112 as illustrated in FIG. 6 and thus the infrastructure 114-1 is floatably disposed relative to layer 110 as shown in FIG. 6. Thus as described, the subject matter of claims 13-14 is supported by Applicants' specification as filed.

**Claim 30 is proper under 35 U.S.C. § 112**

Claim 30 was rejected under 35 U.S.C. § 112, first paragraph. Claim 30 is dependent upon claim 1 and recites that the opposed flexible layers are laminated or sealed to form the seam. Applicants' specification discloses as follows

> For fabrication, the multiple body sections and component layers . . . are sealed or laminated.

Applicants' specification, page 15, line 15- page 16, line 8. Based upon the foregoing, claim 30 is fully supported by Applicants' specification and reconsideration and withdrawal of the rejection of claim 30 is respectfully requested.

**Claim 32 is proper under 35 U.S.C. § 112**

Claim 32 was rejected under rejected under 35 U.S.C. § 112, first paragraph. Claim 32 is dependent upon claim 8 reciting an **array of plates** formed on a substrate wherein claim 32 recites that the substrate is **floatably disposed** in an **interspatial pocket** relative to at least one of the **opposed flexible layer** which as previously discussed above is fully supported by Applicants' specification.

In particular, on page 5, lines 19-22, Applicants' specification discloses that the infrastructure 114-1 is **floatably** disposed in the interspatial pocket 124 to limit interference with the flexible elastomeric layers 110, 112. Further in another embodiment where the guard plate array 104 is

formed on layer 112 as illustrated in FIG. 6, guard plate array 104 or resistant infrastructure 114-2 is floatably disposed relative to layer 110 in interspatial pocket 124 formed between layers 110, 112 as shown in FIG. 6.

**Claim 33 is proper under 35 U.S.C. § 112**

Claim 33 was rejected under 35 U.S.C. § 112, first paragraph. Claim 33 is dependent upon claim 1 and recites *inter alia* a material including a first portion and a second portion and **the first portion** includes **first opposed flexible layers and a first resistant infrastructure** including an array of penetration resistant plates disposed in an interspatial pocket formed between the first opposed flexible layers and the **second portion** includes **second opposed** flexible layers and a **second resistant infrastructure** including an array of penetration resistant plates disposed in an interspatial pocket formed between the second opposed flexible layers, **and the first and second portions being joined or sealed to form a composite material.**

On page 8 of Applicants' specification, and as illustrated in FIGS. 9-10, Applicants disclose a body having multiple body sections 150, 152 or a first portion and a second portion as recited in the claim. As shown, the layers 140, 142 of the multiple body sections 150, 152 form interspatial pockets 146 bounded by a seam having a resistant infrastructure 114 therebetween. Further as disclosed on page 8, the multiple body sections 150, 152 are joined to form a body seam to form a composite material for a glove. (Applicants' specification, page 8, lines 7-10). Thus, Applicants' specification discloses first and second portions 150, 152 including first and second flexible layers and resistant infrastructures as claimed.

**Claim 34 is proper under 35 U.S.C. § 112**

Claim 34 was rejected under 35 U.S.C. § 112, first paragraph. Claim 34 is dependent upon claim 33 and further states that the first and second portions are joined to form a glove having a body cavity. On page 8, lines 7-10, Applicants' specification discloses multiple body sections [or portions] 150, 152 which are joined along an edge portion to form a body seam 154 of a glove. Thus claim 34 is supported by Applicants' specification.

**Claim 3 is proper under 35 U.S.C. § 112**

Claim 3 was rejected under 35 U.S.C. § 112, second paragraph as being indefinite based upon the phrase "an elastomeric or polymer material". Claim 3 recites opposed flexible layers formed of an elastomeric or polymer material. Recitation of "or" terminology in a claim does not render the claim indefinite. MPEP 2173.05(h). Accordingly reconsideration and withdrawal of the rejection of claim 3 is respectfully requested.

**Claims 13-14 are not obvious under 35 U.S.C. § 103**

Claims 13-14 were rejected under 35 U.S.C. § 103 as being unpatentable over Widder in view of Fortier, Gould and Rousseau as set forth in section 14 of the October 10, 2003 Office Action which relies on the previous rejection in section 13 of the October 10, 2003 Office Action based upon Widder, Fortier and Gould.

Claims 13-14 recite a material comprising "opposed flexible layers formed of an elastomeric material or polymer film or material, a seam connecting a portion of the opposed flexible layers to form an interspatial pocket . . .; and a penetration resistant fabric or material floatably disposed in the interspatial pocket . . ." Claims 13-14 were rejected as stated in section 13 on the basis that Widder discloses a bulletproof

plate 70 between walls 74 and 76 in a pocket 72, however, as recited in the Office Action Widder fails to teach a resistant structure located between elastomer walls. See page 5 of the October 10, 2003 Office Action.[1]

As described in Widder, the bulletproof plate 70 is supported in pocket support elements supported on straps of a suspender-like cage 20. As described, the pocket element is either sewn to the strap or inserted through loops. Widder, col. 4, lines 40-50. "Once the user is finished wearing the device he can remove the bulletproof plates from the pockets and launder the cage." Widder, col. 5, lines 50-53.

It is not obvious to modify Widder in view of Fortier and Gould to form a pocket element for the bulletproof plate 70 formed by elastomeric walls. Neither Fortier, Gould nor Rousseau teach a pocket element formed of elastomer walls.

The Office Action states that Gould teaches a polyurethane layer sandwiched between "two elastomer layers 30". As described, platelet free elastomeric layers 30 are laminated together to an elastomeric layer 15 with embedded platelets 25 to a form a composite material. The platelet free elastomeric layers 30 do not form a pocket element.

In fact as described in Gould in the event platelet-free elastomeric layers 30 are desired, these may be formed by dipping [a] mold in a container having only elastomer 30 (and not containing platelets 25 in suspension) prior to and/or after the platelet containing material is dip coated thereon. Gould, col. 10, lines 3-8. The elastomeric layers 30 as described in Gould do not teach a pocket element and thus Gould does not teach elastomeric walls for pocket element 72 of Widder.

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[1] The passage on page 5 states that "Widder fails to teach multiple plates made of epoxy in an array on a substrate located between elastomer walls". It is noted that claims 13-14 do not recite multiple plates made of epoxy in an array on a substrate as set forth in the rejection.

Further the Office Action states that Gould teaches pockets within embedded layer 15. As described in Gould. platelets 25 can be contained in encapsulating pockets in the elastomeric layer 15 to allow the surrounding material to flex and stretch about the platelets 25. This is referred to as decoupling . . . which follow and can occur naturally (e.g. cured natural latex does not adhere to most surfaces), or it can be induced by coatings on platelets 25 that interfere with adhesion of elastomer to platelets 25. Gould, col. 7, lines 30-35. The composite as described includes embedded encapsulating pockets in an elastomer layer and not a pocket element which can be releasably mounted on a suspender-like system to insert a bulletproof plate 72 for protection as described in Widder.

The main object of Widder is to provide an article of clothing that will protect a wearer against gun-related injury or death. Widder, col. 2, lines 1-5 Gould teaches a composition including encapsulated platelets embedded in an elastomeric layer to provide protection from lacerations or punctures of the skin. Gould does not teach or suggest a pocket element to hold a bulletproof plate in accordance with the main object of the invention of Widder.

It is also an object of Widder to provide an article of clothing which can be expeditiously cleaned and easy to wear. Widder, col. 2, lines 15-21. As described in one system of Widder, bulletproof elements 70 are removably stored in pocket elements that are releasably mounted on the suspender-like system. To clean the system, the bulletproof elements are simply removed from the pocket and the rest of the system washed as suitable. Gould teaches composite layers and does not teach or suggest a pocket element 72 to removably contain a bulletproof plate in accordance with this object of Widder. Thus, there is no motivation to modify Widder in view of Gould, Fortier and Rousseau as set forth in the Office Action.

**Claims 1, 5, 7-9, 11-12, 30-31, 36 are not obvious under 35 U.S.C. § 103**

Claims 1, 4-5, 7-9, 30-31 and 36 were rejected under 35 U.S.C. § 103 as being obvious based upon Widder, Fortier and Gould as set forth in section 13 of the October 10, 2003 Office Action. Claims 1, 5, 7-9, 11-12, 30-31 and 36 recite inter alia, opposed flexible layers, a seam connecting a portion of the opposed flexible layers to form an interspatial pocket and a resistant infrastructure including an array of spaced penetration resistant plates disposed in the interspatial pocket.

Widder teaches a body protection system which includes a flexible suspender-like cage and bulletproof elements that are stored in pockets supported on the suspender-like cage. As disclosed "the bulletproof elements preferably includes a plate 70 of heavy bullet proof metal, Kevlar or the like". Widder, col. 4, lines 34-35.

The main object of Widder is to provide an article of clothing that will protect a wearer against gun-related injury or death. Gould teaches a composition including encapsulated platelets embedded in an elastomeric layer for cut and puncture resistance having application for surgical gloves. Gould, col. 3, lines 25-30. Gould does not teach or suggest a pocket element to hold a bulletproof plate in accordance with the main object of Widder, col. 2, lines 1-5.

Fortier teaches a garment to protect against mechanical abrasion having application for trousers or a jacket for a motorcyclist. Fortier does not teach or suggest a bulletproof element. Thus there is no motivation to modify the body protection system of Widder in view of Gould and Fortier.

On page 5 of the Office Action, it states that it would be obvious to employ the epoxy platelets of Fortier as the platelets in Gould to make a protective garment that yields.

As described, the suspender-like cage 20 of Widder includes various belts and straps to support localized protection or bulletproof elements. The suspender-like cage provides freedom of movement while the bulletproof elements 70 provide protection against gun related injuries.

There is no motivation to modify Widder to provide a yielding suspender or garment in view of Gould or Fortier since the suspender-like cage 20 of Widder provides for freedom of movement. Furthermore, there is no motivation to provide a cut or puncture resistance platelet as taught by Gould nor a wear or abrasion resistant platelet as taught by Fortier to provide protection against gun related injuries as set forth in the objects of Widder, col. 2, lines 1-5.

Based upon the foregoing the Office Action fails to establish a prima facie basis to reject claims 1, 5, 7-9, 11-12, 30-31 and 36 under 35 U.S.C. § 103.

**Claim 4 is not obvious under 35 U.S.C. § 103**

Claim 4 was rejected under 35 U.S.C. § 103 based upon Widder, Gould and Fortier. Claim 4 is dependent upon claim 1 and further states that the opposed flexible layers are formed of a polyurethane material. Claim 4 is also rejected based upon Widder, Gould and Fortier. As discussed above neither Widder, Gould nor Fortier teach polyurethane layers forming a pocket or a "polyurethane pocket". As previously discussed, the platelet free elastomeric layers 30 of Gould do not form an interspatial pocket or pocket element for a bulletproof plate. Thus, there is no motivation to combine the references as outlined in the Office Action.

**Claim 32 is not obvious under 35 U.S.C. § 103**

Claim 32 was rejected under 35 U.S.C. § 103 based upon Widder, Gould and Fortier. Claim 32 is dependent upon claims 1 and 8. Claim 8 states that the array of plates recited in claim 1 are

formed on a substrate and claim 32 further recites that the substrate is floatably disposed in the interspatial pocket relative to at least one of the opposed flexible layers. In Gould platelet free elastomeric layers 30 are coated to elastomeric layer 15 with embedded platelets 25 to a form a composite material. Thus, the elastomeric layer with the embedded platelets 25 is not floatably disposed in an interspatial pocket relative to at least one flexible layer as claimed.

**Claims 33-34 are not obvious under 35 U.S.C. § 103**

Claims 33-34 were rejected under 35 U.S.C. § 103 based upon Widder, Gould and Fortier. Claims 33-34 are dependent upon claim 1 and further set forth a **first portion** including opposed flexible layers and a first resistant infrastructure . . . in an interspatial pocket and a **second portion** including second opposed flexible layers and a second resistant infrastructure . . . in an interspatial pocket wherein the first and second portions are joined or sealed to form a composite material.

Generally, the Office Action states that it would have been obvious to employ the epoxy platelets of Fortier as the platelets in the composites of Gould and to insert the resultant composition into the body protection system of Widder. Claims 33-34 as discussed above recite first and second portions including interspatial pockets and resistant infrastructures which are joined or sealed.

To establish a prima facie basis to reject claims under 35 U.S.C. § 103, each of the recited claim elements must be considered which in claims 33-34 includes multiple portions having resistant infrastructures in interspatial pockets which are joined to form a composite material. The Office Action fails to mention or state a basis for rejecting the claims directed to multiple joined portions including multiple resistant infrastructures in interspatial pockets and thus fails to establish a prima facie

basis to reject claims 33-34.

**Claim 35 is not obvious under 35 U.S.C. § 103**

Claim 35 was rejected under 35 U.S.C. § 103 based upon Widder, Gould and Fortier. Claim 35 is dependent on claim 1 and further states that the array of penetration resistant plates are formed on a mesh substrate to form a wire mesh portion. Claim 35 was rejected under 35 U.S.C. § 103 on the basis that "use of mesh wire is deemed a matter of engineering choice" without reference to prior art which teaches a wire mesh portion in combination with the elements of the claims. Thus, the Office Action fails to establish a prima facie basis to reject claim 35.

Based upon the foregoing allowance of claims 1, 3-5, 7-14 and 30-36 is respectfully requested. Applicants also traverses the objection of claim 14 on the basis that "a aramid" recites an element not previously mentioned in the claims. Favorable action with respect to appealed claims 1, 3-5, 7-14 and 30-36 is respectfully requested.

Respectfully submitted,

WESTMAN, CHAMPLIN & KELLY, P.A.

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Appendix A

1. (Previously Presented) A material comprising:

opposed flexible layers;

a seam connecting a portion of the opposed flexible layers to form an interspatial pocket between the opposed flexible layers; and

a resistant infrastructure including an array of spaced penetration resistant plates disposed in the interspatial pocket between the opposed flexible layers.

2. (Canceled)

3. (Previously Presented) The material of claim 1 wherein the opposed flexible layers are formed of an elastomeric or polymer material.

4. (Original) The material of claim 1 wherein the opposed flexible layers are formed of a polyurethane material.

5. (Previously Presented) The material of claim 1 wherein the array of spaced plates are formed of a curable resin.

6. (Previously Presented) The material of claim 1 wherein the spaced plates include a layer of glass beads or particles.

7. (Previously Presented) The material of claim 1 wherein the array of plates are separated by void space between adjacent plates.

8. (Previously Presented) The material of claim 1 wherein the array of plates are formed on a substrate.

9. (Original) The material of claim 8 wherein the substrate is a substrate layer interposed in the interspatial pocket between the opposed flexible layers.

10. (Previously Presented) A material comprising:

opposed flexible layers;

a seam connecting a portion of the opposed flexible layers to form an interspatial pocket between the opposed flexible layers; and

a resistant infrastructure including a plurality of resistant plates formed on one of the opposed flexible layers.

11. (Previously Presented) The material of claim 1 including a plurality of resistant infrastructures interposed in the interspatial pocket between the opposed flexible layers.

12. (Previously Presented) The material of claim 11 wherein the plurality of resistant infrastructures include multiple arrays of plates formed on a substrate.

13. (Previously Presented) A material comprising:

opposed flexible layers formed of an elastomeric or polymer film or material;

a seam connecting a portion of the opposed flexible layers to form an interspatial pocket between the opposed flexible layers; and

a penetration resistant fabric or material floatably disposed in the interspatial pocket relative to at least one of the opposed flexible layers.

14. (Previously Presented) The material of claim 13 wherein the penetration resistant fabric is formed of one of aramid or high

density polyethylene.

15. (Withdrawn) A glove comprising:

a polymer glove body including a reinforced body portion including opposed polymer layers bounded by a seam to form an interspatial pocket therebetween and including a resistant infrastructure interposed in the interspatial pocket between the opposed polymer layers.

16. (Withdrawn) The glove of claim 15 wherein the resistant infrastructure includes a plurality of spaced rigid guard plates interposed in the interspatial pocket between the opposed polymer layers.

17. (Withdrawn) The glove of claim 16 wherein the rigid guard plates are formed of a curable resin or epoxy.

18. (Withdrawn) The glove of claim 15 wherein the opposed polymer layers are formed of polyurethane material.

19. (Withdrawn) The glove of claim 15 wherein the polymer glove body includes a non-reinforced portion and the non-reinforced portion includes laminated polymer layers

20. (Withdrawn) The glove of claim 16 wherein the plurality of rigid guard plates are formed on a substrate.

21. (Withdrawn) The glove of claim 20 wherein the substrate is one of the opposed polymer layers.

22. (Withdrawn) The glove of claim 20 wherein the substrate is a substrate layer interposed in the interspatial pocket between the opposed polymer layers.

23. (Withdrawn) The glove of claim 15 including a plurality of penetration resistant infrastructures in the interspatial pocket between the opposed polymer layers having a higher penetration resistance than the opposed polymer layers.

24. (Withdrawn) A material comprising:

a plurality of spaced guard plates formed on a substrate having a void space between adjacent guard plates and the plurality of spaced guard plates formed of a hard curable material; and

a glass particle layer formed on the hard curable material.

25. (Withdrawn) A method of fabricating a material comprising steps of:

depositing a curable hard layer on a substrate;

coating a first surface of the curable hard layer with glass particles or beads; and

directing a radiation source at a second surface of the curable hard layer to cure the curable hard layer having the glass particles or beads thereon.

26. (Withdrawn) A method of fabricating a glove comprising steps of:

fabricating a flexible penetration resistant infrastructure;

interposing the penetration resistant infrastructure between opposed polymer layers; and

forming a glove body including an interspatial pocket between the opposed polymer layers having the penetration resistant infrastructure disposed therein.

27. (Withdrawn) The method of claim 26 wherein the step of forming

the glove body includes the step of:

cutting the polymer layers of glove body and heat sealing an edge portion of the polymer layers to form the glove body having a body cavity.

28. (Withdrawn) The method of claim 27 wherein the step of forming the glove body includes the step;

laminating portions of the opposed polymer layers to form the interspatial pocket therebetween.

29. (Withdrawn) The method of claim 26 wherein the penetration resistant infrastructure includes a guard plate array and further comprising the steps of:

printing an array of curable guard plates on a substrate; and

curing the printed array of guard plates.

30. (Previously Presented) The material of claim 1 wherein the opposed flexible layers are laminated or sealed to form the seam.

31. (Previously Presented) The material of claim 1 wherein a portion of the opposed flexible layers are laminated or sealed.

32. (Previously Presented) The material of claim 8 wherein the substrate is floatably disposed in the interspatial pocket relative to at least one of the opposed flexible layers.

33. (Previously Presented) The material of claim 1 including a first portion and a second portion and the first portion includes first opposed flexible layers and a first resistant infrastructure including an array of penetration resistant plates disposed in an interspatial pocket formed between the first opposed flexible layers and the second portion includes second opposed flexible layers and a second resistant infrastructure including an array of

penetration resistant plates disposed in an interspatial pocket formed between the second opposed flexible layers, and the first and second portions being joined or sealed to form a composite material.

34. (Previously Presented) The material of claim 33 wherein the first and second portions are joined to form a glove having a body cavity.

35. (Previously Presented) The material of claim 1 wherein the array of penetration resistant plates are formed on a mesh substrate to form a wire mesh portion.

36. (Previously Presented) The material of claim 1 wherein the plates are hexagonal shaped.